

Amendments to the Claims:

1. (Currently Amended) An image recognition apparatus comprising:
a transparent substrate having ~~four~~ four sides;
a plurality of gate lines disposed on the transparent substrate and spaced apart from each other ~~in~~ by a predetermined distance, the gate lines having a predetermined ~~slope such that the gate lines intersect~~ nonzero angle with respect to two sides of the four sides, ~~which are the two sides being~~ adjacent to or facing each other;
a plurality of sensing signal output lines disposed on the transparent substrate, spaced apart from each other ~~in~~ by a predetermined distance and substantially perpendicular to the gate lines; and
an image recognition sensor disposed on a pixel area, the image recognition sensor sensing an image pattern of an object in response to a gate on/off signal applied through the gate lines so as to output an image recognition signal to the sensing signal output lines.
2. (Currently Amended) The apparatus of claim 1, wherein the predetermined nonzero angle ~~slope~~ is from about 22.5 to about 45 degrees.
3. (Original) The apparatus of claim 1, wherein the image recognition sensor comprises a photoelectric sensor.
4. (Currently Amended) The apparatus of claim 3, wherein the image recognition sensor comprises:
a first TFT connected to a gate line adjacent thereto, the first TFT sensing the image pattern corresponding to a reflecting light reflected from the object;
a storage capacitor that ~~charges an electron charge~~ is charged to a level corresponding to the image pattern from the first TFT; and
a second TFT connected to the gate line adjacent thereto, the second TFT outputting a voltage signal to a sensing signal output line adjacent thereto as the image recognition signal corresponding to the ~~electron charge charged into~~ in the storage capacitor ~~to a sensing signal output line adjacent thereto~~.

5. (Original) The apparatus of claim 1, wherein the image recognition sensor comprises a capacitance type image recognition sensor that senses the image pattern using a capacitance variation between the object and the image recognition sensor.

6. (Currently Amended) The apparatus of claim 6, wherein the image recognition sensor comprises:

a first TFT connected to a gate line adjacent thereto;

a conductive sensing electrode that ~~charges an electron charge~~ is charged to a level corresponding to a distance ~~variation~~ between the object and the image recognition sensor in response to the first TFT being turned on; and

a second TFT that outputs a voltage signal to a sensing signal output line adjacent thereto as the image recognition signal corresponding to the ~~electron charge level~~ charged into in the conductive sensing electrode ~~to a sensing signal output line adjacent thereto~~.

7. (Currently Amended) The apparatus of claim 1, wherein the object is ~~a human being and the image pattern is obtained from a human finger of the human being~~.

8. (Currently Amended) An image recognition apparatus comprising:

a transparent substrate having four sides;

a plurality of gate lines disposed on the transparent substrate and spaced apart from each other ~~in by~~ a predetermined distance, the gate lines having a predetermined ~~slope such that the gate lines intersect~~ nonzero angle with respect to two sides of the four sides, ~~which are the two sides being~~ adjacent to or facing each other;

a plurality of sensing signal output lines disposed on the transparent substrate, spaced apart from each other ~~in by~~ a predetermined distance and substantially perpendicular to the gate lines; and

an image recognition sensor disposed on a pixel area, responsive to a gate on/off signal applied through the gate lines, and image recognition sensor sensing an image pattern of an object and outputting an image recognition signal to the sensing signal output lines, ~~which is corresponding wherein the image recognition signal corresponds~~ to a reflecting light reflected from the image pattern printed on the object.

9. (Currently Amended) The apparatus of claim 8, wherein the predetermined nonzero angle ~~slope~~ is from about 22.5 to about 45 degrees.

10. (Currently Amended) The apparatus of claim 8, wherein the image recognition sensor comprises:

a first TFT connected to a gate line adjacent thereto, the first TFT sensing the image pattern in response to the reflecting light reflected from the object;

a storage capacitor that charges an electron charge corresponding to the image pattern from the first TFT; and

a second TFT connected to the gate line adjacent thereto, the second TFT outputting a voltage signal to a sensing signal output line adjacent thereto as the image recognition signal corresponding to the ~~electron-charge level in charged into~~ the storage capacitor ~~to a sensing signal output line adjacent thereto~~.

11. (Currently Amended) The apparatus of claim 8, wherein the object is ~~a human being and the image pattern is obtained from~~ a human finger ~~of the human being~~.

12. (Currently Amended) An image recognition apparatus comprising:

a transparent substrate having four sides;

a plurality of gate lines disposed on the transparent substrate and spaced apart from each other ~~in~~ by a predetermined distance, the gate lines having a predetermined ~~slope such that the gate lines intersect~~ nonzero angle with respect to two sides of the four sides, ~~which are the two sides being~~ adjacent to or facing each other;

a plurality of sensing signal output lines disposed on the transparent substrate, spaced apart from each other ~~in~~ by a predetermined distance and substantially perpendicular to the gate lines; and

an image recognition sensor disposed on a pixel area, the image recognition sensor sensing an image pattern of an object and outputting an image recognition signal to the sensing signal output lines, ~~which is corresponding~~ wherein the image recognition signal corresponds to a distance variation between an object and the image recognition sensor.

13. (Currently Amended) The apparatus of claim 12, wherein the predetermined nonzero angle slope is from about 22.5 to about 45 degrees.

14. (Currently Amended) The apparatus of claim 12, wherein the image recognition sensor comprises:

a first TFT connected to a gate line adjacent thereto;

a conductive sensing electrode that ~~charges an electron~~ is charged at a charge level corresponding to the distance variation between the object and the image recognition sensor; and

a second TFT that outputs a voltage signal to a sensing signal output line adjacent thereto as the image recognition signal corresponding to the electron charge level in charged into the conductive sensing electrode ~~to a sensing signal output lines adjacent thereto~~.

15. (Currently Amended) The apparatus of claim 12, wherein the object is ~~a human being and the image pattern is obtained from a human finger of the human being~~.

16. (Currently Amended) An LCD apparatus comprising:

An LCD panel that displays an image;

An image recognition part including a first transparent substrate having four sides, a plurality of gate lines spaced apart from each other ~~in~~ by a predetermined distance, the gate lines having a predetermined nonzero angle slope such that the gate lines intersect with respect to two sides of the four sides, ~~which are the two sides being~~ adjacent to or facing each other, a plurality of sensing signal output lines spaced apart from each other ~~in~~ by a predetermined distance and substantially perpendicular to the gate lines, and an image recognition sensor disposed on a pixel area, the image recognition sensor sensing an image pattern of an object in response to a gate on/off signal applied through the gate lines so as to output an image recognition signal to the sensing signal output lines; and

a backlight assembly disposed under the LCD panel, the backlight assembly supplying a light to the LCD panel and the image recognition part.

17. (Currently Amended) The LCD apparatus of claim 16, wherein the predetermined nonzero angle slope is from about 22.5 to about 45 degrees.

18. (Original) The LCD apparatus of claim 16, wherein the image recognition sensor comprises a photoelectric sensor that senses the image pattern using a reflecting light reflected from the object or a capacitance type image recognition sensor that senses the image pattern using a capacitance variation between the object and the image recognition sensor.

19. (Currently Amended) The LCD apparatus of claim 16, wherein the LCD panel comprises;

a second transparent substrate;

a plurality of gate lines disposed on the second transparent substrate; and

a plurality of data lines disposed on the second transparent substrate and substantially perpendicular to the gate lines,

wherein the gate and data lines are ~~inclined in the~~ positioned at a predetermined slope angle with respect to the gate lines and sensing signal output lines disposed on the first transparent substrate.

20. (Currently Amended) The LCD apparatus of claim 16, wherein the object is a ~~human being and the image pattern is obtained from~~ a human finger ~~of the human being~~.